State of California
The Resources Agency
Department of Water Resources

SP-T6 INTERAGENCY WILDLIFE MANAGEMENT COORDINATION AND WILDLIFE MANAGEMENT PLAN DEVELOPMENT

INTERIM REPORT

Oroville Facilities Relicensing
FERC Project No. 2100

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Oroville Facilities Relicensing
FERC Project No. 2100

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REPORT SUMMARY

This Interim Report provides relicensing stakeholders with an overview of progress to date related to tasks within Study Plan T-6 (Interagency Wildlife Management Coordination and Wildlife Management Plan Development).

Task 1-Collection and analyses of each land management agencies' current mission, goals, objectives, management direction, policies and plans as they relate to wildlife management within the study area was completed during February 2003.

Task 2-Identification of common elements in land management agencies' plans and policies as well as inconsistencies between agencies was completed by the Task Group during March 2003. Several areas of potential conflict were identified including

- The Department of Fish and Game (DFG) Code Section limiting boat speeds to five miles per hour or less in designated wildlife management areas. This regulation conflicts with current recreation management and use on the Thermalito Afterbay.
- The Department of Parks and Recreation (DPR) has a policy to exclude non-native species from State Parks lands including the introduced wild turkey. DFG has actively introduced and managed turkeys in areas adjacent to DPR lands.
- Some current land uses within the Oroville Wildlife Area (OWA) may be inappropriate in a designated Wildlife Management Area including commercial gravel harvest and recreational development and use not consistent with wildlife management goals.

Task 3-This task (In coordination with appropriate agencies, evaluate the adequacy of current levels of wildlife management and fish and wildlife related law enforcement) has been transferred to the Land Use, Land Management, and Aesthetics Work Group.

Task 4-The Task Group recommended a minimum of two scheduled Task Group meetings per year over the term of the new license as the best approach to insure improved communication and coordination. These meetings would provide a forum to:

- Explore opportunities for cooperative, interagency wildlife management and planning including cooperative habitat improvement projects
- Discuss and resolve future wildlife management conflicts
- Cooperatively revaluate land use practices in response to new species listings under the State or Federal Endangered Species Acts
- Provide feedback on ongoing wildlife population and habitat monitoring

Task 5-This task (Explore needs and sources for wildlife management and law enforcement funding) was also transferred to the Land Use, Land Management and Aesthetics (LULMA) Work Group.

Task 6-Develop criteria for development of a coordinated Wildlife Management Plan for the project area. Per SP-T6 Task Group recommendation, the Relicensing Wildlife Management Plan will include:

- All wildlife related Resource Actions adopted in the Final FERC License Application
- Vernal Pool Invertebrate Land Management Plan
- Bald Eagle Territory Management Plans
- Conservation measures developed in the Biological Assessment/Opinion process under the Federal ESA Section 7 consultation process
- Identification of wildlife related monitoring, reporting, and coordination requirements

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1.0 INTRODUCTION

During project scoping, several relicensing stakeholders identified an opportunity for improved interagency coordination on wildlife management issues. Further, relicensing stakeholders requested a determination as to the adequacy of current levels of funding for wildlife management and wildlife/fisheries related law enforcement in the project area.

The purpose of this Interim Report is to:

- explore opportunities for improved interagency wildlife coordination among the principal land management and wildlife regulatory agencies within the project area including the California Department of Water Resources (DWR), DFG, DPR, U. S. Bureau of Land Management (BLM), U.S. Forest Service (USFS), and U. S. Fish and Wildlife Service (USFWS)
- provide an update on the status of the evaluation of the adequacy of funding for wildlife management and wildlife/fishery related law enforcement in the project area
- outline the contents of the Wildlife Management Plan

1.1 BACKGROUND INFORMATION

Several land management agencies actively manage wildlife resources within the project boundary including Plumas National Forest, BLM, DFG, DPR, and DWR. Each of these land management agencies has differing missions, policies, management direction, funding levels and priorities related to management of wildlife resources. Stakeholders have suggested that opportunities exist to improve interagency coordination, management, and planning related to wildlife resources.

1.1.3 Statutory/Regulatory Requirements

In addition to review of land management agencies plans and policies, DWR reviewed State and federal wildlife related laws to determine if compliance issues exist.

1.1.4 Study Area

During study plan development, the stakeholders defined the study area as within the FERC Project boundary and other areas that affect wildlife use of Project lands. Study plans approved by the Environmental Work Group define the limits of the study area.

1.2 DESCRIPTION OF FACILITIES

The Oroville Facilities were developed as part of the State Water Project (SWP), a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. The main purpose of the SWP is to store and distribute water to supplement the needs of urban and agricultural water users in northern California, the San Francisco Bay area, the San Joaquin Valley, and southern California. The Oroville Facilities are also operated for flood management, power generation, to improve water quality in the Delta, provide recreation, and enhance fish and wildlife.

FERC Project No. 2100 encompasses 41,100 acres and includes Oroville Dam and Reservoir, three power plants (Hyatt Pumping-Generating Plant, Thermalito Diversion Dam Power Plant, and Thermalito Pumping-Generating Plant), Thermalito Diversion Dam, the Feather River Fish Hatchery and Fish Barrier Dam, Thermalito Power Canal, OWA, Thermalito Forebay and Forebay Dam, Thermalito Afterbay and Afterbay Dam, and transmission lines, as well as a number of recreational facilities. An overview of these facilities is provided on Figure 1.2-1. The Oroville Dam, along with two small saddle dams, impounds Lake Oroville, a 3.5-million-acre-feet (maf) capacity storage reservoir with a surface area of 15,810 acres at its normal maximum operating level.

The hydroelectric facilities have a combined licensed generating capacity of about 762 megawatts (MW). The Hyatt Pumping-Generating Plant is the largest of the three power plants with a capacity of 645 MW. Water from the six-unit underground power plant (three conventional generating and three pumping-generating units) is discharged through two tunnels into the Feather River just downstream of Oroville Dam. The plant has a generating and pumping flow capacity of 16,950 cubic feet per second (cfs) and 5,610 cfs, respectively. Other generation facilities include the 3-MW Thermalito Diversion Dam Power Plant and the 114-MW Thermalito Pumping-Generating Plant.

Thermalito Diversion Dam, four miles downstream of the Oroville Dam, creates a tail water pool for the Hyatt Pumping-Generating Plant and is used to divert water to the Thermalito Power Canal. The Thermalito Diversion Dam Power Plant is a 3-MW power plant located on the left abutment of the Diversion Dam. The power plant releases a maximum of 615 cfs of water into the river.

The Power Canal is a 10,000-foot-long channel designed to convey generating flows of 16,900 cfs to the Thermalito Forebay and pump-back flows to the Hyatt Pumping-Generating Plant. The Thermalito Forebay is an off-stream regulating reservoir for the 114-MW Thermalito Pumping-Generating Plant. The Thermalito Pumping-Generating Plant is designed to operate in tandem with the Hyatt Pumping-Generating Plant and has generating and pump-back flow capacities of 17,400 cfs and 9,120 cfs, respectively. When in generating mode, the Thermalito Pumping-Generating Plant discharges into the Thermalito Afterbay, which is contained by a 42,000-foot-long earth-fill dam. The Afterbay is used to release water into the Feather River downstream of the Oroville Facilities, helps regulate the power system, provides storage for pump-back operations, and provides recreational opportunities. Several local irrigation districts receive water from the Afterbay.

The Feather River Fish Barrier Dam is downstream of the Thermalito Diversion Dam and immediately upstream of the Feather River Fish Hatchery. The flow over the dam maintains fish habitat in the low-flow channel of the Feather River between the dam and the Afterbay outlet, and provides attraction flow for the hatchery. The hatchery was intended to compensate for spawning grounds lost to returning salmon and steelhead

trout from the construction of Oroville Dam. The hatchery can accommodate 15,000 to 20,000 adult fish annually.

The Oroville Facilities support a wide variety of recreational opportunities. They include: boating (several types), fishing (several types), fully developed and primitive camping (including boat-in and floating sites), picnicking, swimming, horseback riding, hiking, off-road bicycle riding, wildlife watching, hunting, and visitor information sites with cultural and informational displays about the developed facilities and the natural environment. There are major recreation facilities at Loafer Creek, Bidwell Canyon, the Spillway, North and South Thermalito Forebay, and Lime Saddle. Lake Oroville has two full-service marinas, five car-top boat launch ramps, ten floating campsites, and seven dispersed floating toilets. There are also recreation facilities at the Visitor Center and the OWA.

The OWA comprises approximately 11,000-acres west of Oroville that is managed for wildlife habitat and recreational activities. It includes the Thermalito Afterbay and surrounding lands (approximately 6,000 acres) along with 5,000 acres adjoining the Feather River. The 5,000 acre area straddles 12 miles of the Feather River, which includes willow and cottonwood lined ponds, islands, and channels. Recreation areas include dispersed recreation (hunting, fishing, and bird watching), plus recreation at developed sites, including Monument Hill day use area, model airplane grounds, three boat launches on the Afterbay and two on the river, and two primitive camping areas. DFG habitat enhancement program includes a wood duck nest-box program and dry land farming for nesting cover and improved wildlife forage. Limited gravel extraction also occurs in a number of locations.

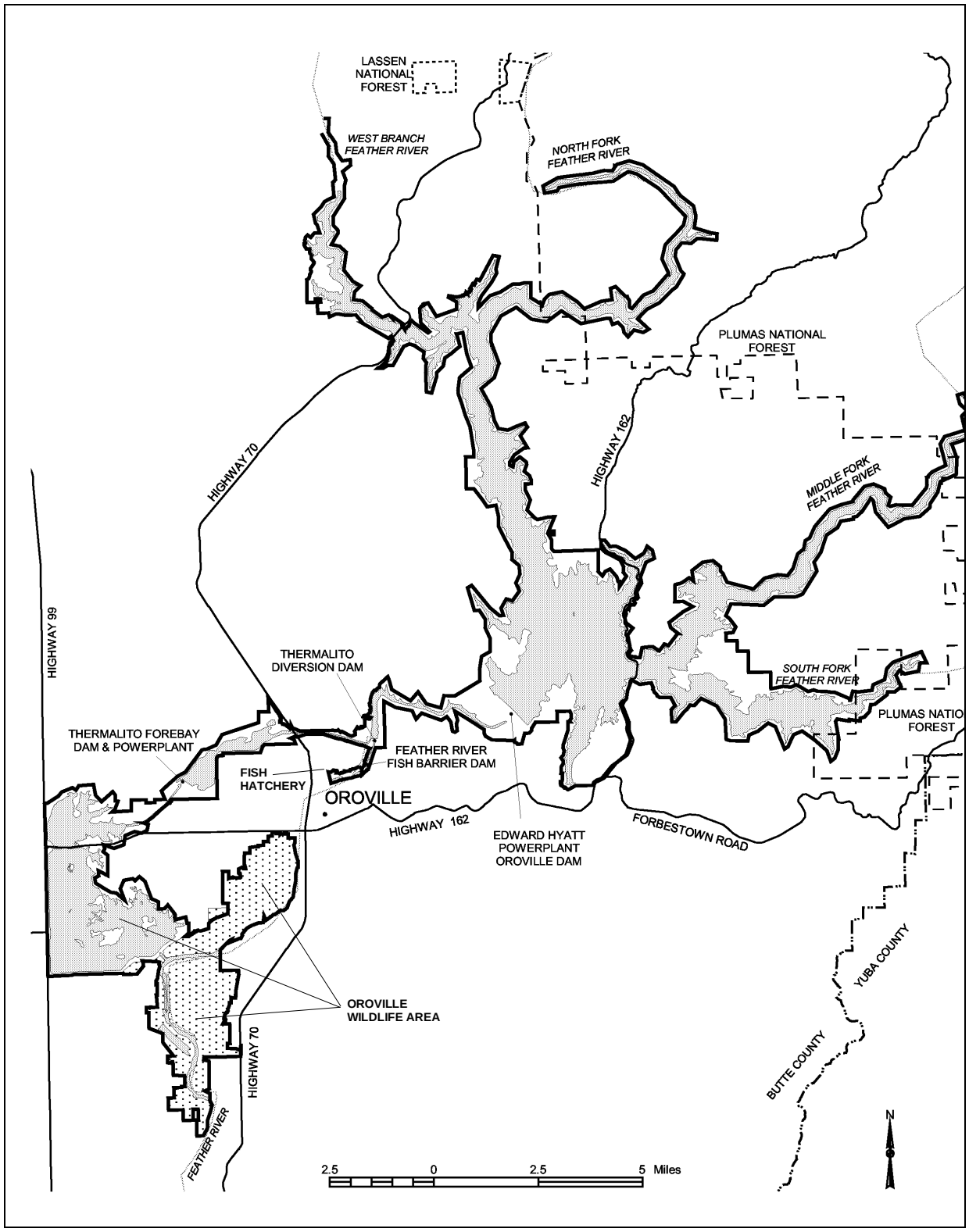

Figure 1.2-1. Oroville Facilities FERC Project Boundary

1.3 CURRENT OPERATIONAL CONSTRAINTS

Operation of the Oroville Facilities varies seasonally, weekly and hourly, depending on hydrology and the objectives DWR is trying to meet. Typically, releases to the Feather River are managed to conserve water while meeting a variety of water delivery requirements, including flow, temperature, fisheries, recreation, diversion and water quality. Lake Oroville stores winter and spring runoff for release to the Feather River as necessary for project purposes. Meeting the water supply objectives of the SWP has always been the primary consideration for determining Oroville Facilities operation (within the regulatory constraints specified for flood control, in-stream fisheries, and downstream uses). Power production is scheduled within the boundaries specified by the water operations criteria noted above. Annual operations planning are conducted for multi-year carry over. The current methodology is to retain half of the Lake Oroville storage above a specific level for subsequent years. Currently, that level has been established at 1,000,000 acre-feet (af); however, this does not limit draw down of the reservoir below that level. If hydrology is drier than expected or requirements greater than expected, additional water would be released from Lake Oroville. The operations plan is updated regularly to reflect changes in hydrology and downstream operations. Typically, Lake Oroville is filled to its maximum annual level of up to 900 feet above mean sea level (msl) in June and then can be lowered as necessary to meet downstream requirements, to its minimum level in December or January. During drier years, the lake may be drawn down more and may not fill to the desired levels the following spring. Project operations are directly constrained by downstream operational constraints and flood management criteria as described below.

1.3.1 Downstream Operation

An August 1983 agreement between DWR and DFG entitled, “Agreement Concerning the Operation of the Oroville Division of the State Water Project for Management of Fish & Wildlife,” sets criteria and objectives for flow and temperatures in the low flow channel and the reach of the Feather River between Thermalito Afterbay and Verona. This agreement: (1) establishes minimum flows between Thermalito Afterbay Outlet and Verona which vary by water year type; (2) requires flow changes under 2,500 cfs to be reduced by no more than 200 cfs during any 24-hour period, except for flood management, failures, etc.; (3) requires flow stability during the peak of the fall-run Chinook spawning season; and (4) sets an objective of suitable temperature conditions during the fall months for salmon and during the later spring/summer for shad and striped bass.

1.3.1.1 Instream Flow Requirements

The Oroville Facilities are operated to meet minimum flows in the Lower Feather River as established by the 1983 agreement (see above). The agreement specifies that Oroville Facilities release a minimum of 600 cfs into the Feather River from the Thermalito Diversion Dam for fisheries purposes. This is the total volume of flows from

the diversion dam outlet, diversion dam power plant, and the Feather River Fish Hatchery pipeline.

Generally, the instream flow requirements below Thermalito Afterbay are 1,700 cfs from October through March, and 1,000 cfs from April through September. However, if runoff for the previous April through July period is less than 1,942,000 af (i.e., the 1911-1960 mean unimpaired runoff near Oroville), the minimum flow can be reduced to 1,200 cfs from October to February, and 1,000 cfs for March. A maximum flow of 2,500 cfs is maintained from October 15 through November 30 to prevent spawning in overbank areas that might become de-watered.

1.3.1.2 Temperature Requirements

The Diversion Pool provides the water supply for the Feather River Fish Hatchery. The hatchery objectives are 52°F for September, 51°F for October and November, 55°F for December through March, 51°F for April through May 15, 55°F for last half of May, 56°F for June 1-15, 60°F for June 16 through August 15, and 58°F for August 16-31. A temperature range of plus or minus 4°F is allowed for objectives, April through November.

There are several temperature objectives for the Feather River downstream of the Afterbay Outlet. During the fall months, after September 15, the temperatures must be suitable for fall-run Chinook. From May through August, they must be suitable for shad, striped bass, and other warmwater fish.

NOAA Fisheries has also established an explicit criterion for steelhead trout and spring-run Chinook salmon. Memorialized in a biological opinion on the effects of the Central Valley Project and SWP on Central Valley spring-run Chinook and steelhead as a reasonable and prudent measure; DWR is required to control water temperature at Feather River mile 61.6 (Robinson's Riffle in the low-flow channel) from June 1 through September 30. This measure requires water temperatures less than or equal to 65°F on a daily average. The requirement is not intended to preclude pump-back operations at the Oroville Facilities needed to assist the State of California with supplying energy during periods when the California Independent System Operator (ISO) anticipates a Stage 2 or higher alert.

The hatchery and river water temperature objectives sometimes conflict with temperatures desired by agricultural diverters. Under existing agreements, DWR provides water for the Feather River Service Area (FRSA) contractors. The contractors claim a need for warmer water during spring and summer for rice germination and growth (i.e., 65°F from approximately April through mid May, and 59°F during the remainder of the growing season). There is no obligation for DWR to meet the rice water temperature goals. However, to the extent practical, DWR does use its operational flexibility to accommodate the FRSA contractor's temperature goals.

1.3.1.3 Water Diversions

Monthly irrigation diversions of up to 190,000 af (July 2002) are made from the Thermalito Complex during the May through August irrigation season. Total annual entitlement of the Butte and Sutter County agricultural users is approximately 1 maf. After meeting these local demands, flows into the lower Feather River continue into the Sacramento River and into the Sacramento-San Joaquin Delta. In the northwestern portion of the Delta, water is pumped into the North Bay Aqueduct. In the south Delta, water is diverted into Clifton Court Forebay where the water is stored until it is pumped into the California Aqueduct.

1.3.1.4 Water Quality

Flows through the Delta are maintained to meet Bay-Delta water quality standards arising from DWR's water rights permits. These standards are designed to meet several water quality objectives such as salinity, Delta outflow, river flows, and export limits. The purpose of these objectives is to attain the highest water quality, which is reasonable, considering all demands being made on the Bay-Delta waters. In particular, they protect a wide range of fish and wildlife including Chinook salmon, Delta smelt, striped bass, and the habitat of estuarine-dependent species.

1.3.2 Flood Management

The Oroville Facilities are an integral component of the flood management system for the Sacramento Valley. During the wintertime, the Oroville Facilities are operated under flood control requirements specified by the U.S. Army Corps of Engineers (USACE). Under these requirements, Lake Oroville is operated to maintain up to 750,000 af of storage space to allow for the capture of significant inflows. Flood control releases are based on the release schedule in the flood control diagram or the emergency spillway release diagram prepared by the USACE, whichever requires the greater release. Decisions regarding such releases are made in consultation with the USACE.

The flood control requirements are designed for multiple use of reservoir space. During times when flood management space is not required to accomplish flood management objectives, the reservoir space can be used for storing water. From October through March, the maximum allowable storage limit (point at which specific flood release would have to be made) varies from about 2.8 to 3.2 maf to ensure adequate space in Lake Oroville to handle flood flows. The actual encroachment demarcation is based on a wetness index, computed from accumulated basin precipitation. This allows higher levels in the reservoir when the prevailing hydrology is dry while maintaining adequate flood protection. When the wetness index is high in the basin (i.e., wetness in the watershed above Lake Oroville), the flood management space required is at its greatest amount to provide the necessary flood protection. From April through June, the

maximum allowable storage limit is increased as the flooding potential decreases, which allows capture of the higher spring flows for use later in the year. During September, the maximum allowable storage decreases again to prepare for the next flood season. During flood events, actual storage may encroach into the flood reservation zone to prevent or minimize downstream flooding along the Feather River.

2.0 NEED FOR STUDY

There is concern that wildlife management of project lands may currently be undertaken in a piecemeal fashion by each individual land management agency without adequate interagency coordination. This study will identify opportunities to improve interagency coordination and communication on land use and wildlife management issues over the term of the license. The study is important to the development of an integrated wildlife management plan that is required by FERC.

3.0 STUDY OBJECTIVE

- Develop a coordinated interagency terrestrial resource management plan (Wildlife Management Plan) for the project area, including the Oroville Wildlife Area.
- Identify funding needed to meet resource management goals.
- Identify opportunities to enhance interagency coordination, management, and planning related to wildlife resources within the project area.

3.1. SETTLEMENT AGREEMENT

The Wildlife Management Plan will be submitted to the Federal Energy Regulatory Commission (FERC) as part of the license application. The Wildlife Management Plan will contain those wildlife resource actions directly under FERC's jurisdiction and may not contain settlement agreement items outside of FERC's jurisdiction.

4.0 METHODOLOGY

TASK 4.1-Collect and analyze each land management agencies' current mission, goals, objectives, management direction, policies and plans as they relate to wildlife management within the study area.

DWR requested, and each land management agency provided, relevant wildlife management and land use documents for analyses including plans, policies, regulations, and management guidelines.

TASK 4.2-Identify common elements in land management agencies' plans and policies as well as inconsistencies between agencies.

DWR analyzed the wildlife management and land use documents provided by each land management agency and identified conflicts and inconsistencies. These conflicts and inconsistencies were presented to the land management agencies and discussed at the Study Plan T-6 Task Group meetings. Additional potential wildlife management or land use conflicts were identified by land management agency participants within the Task Group setting.

TASK 4.3-In coordination with appropriate agencies, evaluate the adequacy of current levels of wildlife management and fish and wildlife related law enforcement.

This task overlapped issues and study plans within three Work Groups. LULMA Work Group is taking the lead on this task. At least one Resource Action has been developed to address this issue. However, any recommendations developed by the LULMA Work Group will be included and evaluated within the Final Report for SP-T6.

TASK 4.4-Identify methods for improving interagency communication and coordination on wildlife issues.

Task Group Action Item The Task Group consisting of professional wildlife staff from each of the land management and regulatory agencies. It will untimately be up to the TasK Group to identify methods to improve interagency wildlife coordination and planning.

TASK 4.5-Explore needs and sources for wildlife management and law enforcement funding.

This task overlapped issues and study plans within three Work Groups. The LULMA Work Group is taking the lead on this task. At least one Resource Action has been developed to address this issue. However, any recommendations developed by the LULMA Work Group will be included and evaluated within the Final Report for SP-T6.

TASK 4.6-Develop criteria for development of a coordinated Wildlife Management Plan for the project area.

Task Group Action Item

5.0 STUDY RESULTS

TASK 5.1-Collect and analyze each land management agencies' current mission, goals, objectives, management direction, policies and plans as they relate to wildlife management within the study area.

Land management agencies provided wildlife management and planning documents prior to the first Task Group meeting in March 2003. These land management agencies included the DFG, DPR, DWR, USFS. BLM was unable to attend the Task Group Meeting. However, a separate meeting was conducted with BLM staff to obtain their input approximately two weeks after the first Task Group meeting. The USFWS is not a land management agency within the project area, but has important regulatory responsibilities under the Federal Endangered Species Act and Migratory Bird Treaty Act. The USFWS also participated in Task Group meetings.

TASK 5.2-Identify common elements in land management agencies' plans and policies as well as inconsistencies between agencies.

In general, the Task Group found that the existing land management agencies' wildlife related plans, policies, regulations, and management were not in conflict. However, several areas of potential conflict were identified including:

- DFG Code Section limiting boat speeds to 5 miles per hour or less in designated Wildlife Management Areas. This regulation conflicts with current recreation management and use on the Thermalito Afterbay.
- DPR has a policy to exclude non-native species from State Parks lands including the introduced wild turkey. DFG has actively introduced and managed turkeys in areas adjacent to DPR lands.
- Some current land uses within the OWA may be inappropriate in a designated Wildlife Management Area including commercial gravel harvest and recreational development and use not consistent with wildlife management goals.

Identification of potential methods to minimize or avoid these conflicts is a SP-T6 Task Group Action Item to be reported and discussed at the next Task Group meeting.

TASK 5.3-In coordination with appropriate agencies, evaluate the adequacy of current levels of wildlife management and fish and wildlife related law enforcement.

This issue/task has been transferred to the Land Use, Land Management, and Aesthetics Work Group. However, prior to transfer of this issue, the SP-T6 Task Group had some preliminary discussion/evaluation related to this issue. A summary of the Task Group's discussion is provided below as input to the LULMA Work Group's analyses.

The Task Group generally considered the current level of wildlife management and wildlife and fisheries related law enforcement as adequate to meet a minimum level of protection and enhancement as proscribed by current management plans. However, the Task Group strongly suggested that the current minimum level of protection and enhancement is not a desirable or adequate level of management or enforcement for the future. In particular, the Task Group identified opportunities to:

- More intensively manage fish and wildlife populations within the OWA
- Increase fish and wildlife related law enforcement within the project area, especially within the OWA
- Improve public safety within the OWA
- Improve interagency ESA species management relative to bald eagles, vernal pools, and valley elderberry longhorn beetle habitat
- Minimize existing wildlife management/land use conflicts

TASK 5.4-Identify methods for improving interagency communication and coordination on wildlife issues.

The Task Group recommended a minimum of two scheduled Task Group meetings per year over the term of the new license as the best approach to insure continued and improved communication and coordination. These meetings would provide a forum to:

- Explore opportunities for cooperative, interagency wildlife management and planning including cooperative habitat improvement projects
- Discuss and resolve future wildlife management conflicts
- Cooperatively revaluate land use practices in response to new species listings under the State or Federal Endangered Species Acts
- Provide feedback on ongoing wildlife population and habitat monitoring

TASK 5.5-Explore needs and sources for wildlife management and law enforcement funding.

This task was also transferred to the LULMA Work Group. The SP-T6 Task Group has not identified potential additional sources of funding for wildlife management or law enforcement.

TASK 5.6-Develop criteria for development of a coordinated Wildlife Management Plan for the project area.

Per SP-T6 Task Group recommendation, the Relicensing Wildlife Management Plan will include:

- All wildlife related Resource Actions adopted in the Final FERC License Application

- Vernal Pool Invertebrate Land Management Plan
- Bald Eagle Territory Management Plans
- Conservation measures developed in the Biological Assessment/Opinion process under the Federal ESA Section 7 consultation process
- Identification of wildlife related monitoring, reporting, and coordination requirements

6.0 ANALYSES

The Task Group (comprised of local land management and regulatory wildlife biologists) has been an effective forum to identify and discuss interagency wildlife issues. Continuation of regular Task Group meetings (two per year) should allow for improved interagency wildlife coordination over the terms of the license. These meetings will be especially useful where integrated area-wide planning is key to species management (for example as additional species are listed under the State or federal Endangered Species acts).

Assignment of the issues related to determination of the adequacy of current levels and funding of fish and wildlife management and enforcement to the Land Use, Land Management, and Aesthetics Work Group should reduce redundancy between work groups. However, continued tracking and involvement by Environmental Work Group participants in these issues will be necessary to insure that issues specifically identified within the EWG are adequately addressed and that any recommendations developed are reported back to the EWG.